

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims

1-10 (Cancelled)

11. (Previously Presented) A storage system being coupled with a computer comprising:
a first logical volume for storing data used by said computer; and
a storage control device for controlling access to said first logical volume;
wherein said storage control device receives identification of said first logical volume, start and end addresses of a part of data stored in said first logical volume, and identification of a second logical volume for storing a copy of said part of data stored in said first logical volume from said computer; and
wherein said storage control device copies said part of data stored in said first logical volume designated by said identification of said first logical volume and said start and end addresses to said second logical volume designated by said identification of said second logical volume.

12. (Previously Presented) A storage system as claimed in claim 11,
wherein said storage system further comprises said second logical volume; and
wherein said second logical volume is coupled with said storage control device.

13. (Previously Presented) A storage system as claimed in claim 11,
wherein said storage system is coupled with another storage system comprising said second logical volume and another storage control device for controlling access to said second logical volume;

wherein said storage control device is coupled with said another storage control device;
and

wherein said storage control device transfers said part of data stored in said first logical volume to said another storage control device, so that

said part of data stored in said first logical volume is written in said second logical volume by said another storage control device.

14. (Previously Presented) A storage system as claimed in claim 12 further comprising:

an update bit map which shows if said storage control device updates said part of data;

wherein said storage control device updates said part of data stored in said first logical volume in response to an update request to said part of data from said computer; and said storage control device copies updated data stored in a part of an area of said first logical volume, said part of data is stored in said part of an area, to said second logical volume, if said storage control device receives a split instruction containing said identification of said first logical volume, said start and end addresses, and said identification of a second logical volume from said computer, said storage control device stops copying updated data stored in said part of an area of said first logical volume to said second logical volume after receiving said split instruction, if said storage control device updates said part of data stored in said first logical volume after receiving said split instruction,

said storage control device updates said update bit map, and

when said storage control device receives a re-synchronizing instruction containing said identification of said first logical volume, said start and end addresses, and said identification of a second logical volume from said computer,

said storage control device copies updated data stored in said part of an area of said first logical volume, said updated data is updated after receiving said split instruction, to said second logical volume by using said update bit map.

15. (Previously Presented) A storage system as claimed in claim 12,

wherein said storage control device receives two or more pairs of start and end addresses, each of the pairs designates a part of data stored in said first logical volume, from said computer, and

wherein said storage control device has two or more update bit maps each of which is corresponding to one of said two or more pairs of start and end addresses.

16. (Previously Presented) A storage system as claimed in claim 12, when said storage control device receives a write request to a part of an area of said first logical volume, said part of data is stored in said part of an area,

if said storage control device has not copied data updated according to said write request to said second logical volume, said storage control device writes data to said part of an area of said first logical volume after copying data updated according to said write request to said second logical volume, and

if said storage control device has already copied data updated according to said write request to said second logical volume, said storage control device writes data to said part of an area of said first logical volume.

17. (Previously Presented) A storage system being coupled with a computer comprising:

a first logical volume for storing data used by said computer;

a second logical volume for storing a copy of data stored in said first logical volume;

a control device for controlling access to said first logical volume and said second logical volume; and

an update bit map which shows if said control device updates data stored in said first logical volume;

wherein said storage control device receives identification of said first logical volume and identification of said second logical volume from said computer;

said storage control device copies data stored in said first logical volume designated by said identification of said first logical volume to said second logical volume designated by said identification of said second logical volume,

wherein said storage control device updates data stored in said first logical volume in response to an update request from said computer and said storage control device copies updated data stored in said first logical volume to said second logical volume,

if said storage control device receives split instruction containing said identification of said first logical volume and said identification of second logical volume from said computer, said storage control device stops copying updated data stored in said first logical volume to said second logical volume after receiving said split instruction,

if said storage control device updates data stored in said first logical volume after receiving said split instruction,

said storage control device updates said update bit map, and

when said storage control device receives a re-synchronizing instruction containing said identification of said first logical volume, start and end addresses of a part of data stored in said first logical volume, and said identification of a second logical volume from said computer,

said storage control device copies updated data stored in a part of an area of said first logical volume, said part of data is stored in said part of an area and said updated data is updated after receiving said split instruction, to said second logical volume by using said update bit map.

18. (Previously Presented) A storage system as claimed in claim 17,
wherein said split instruction further contains start and end addresses of a part of data stored in said first logical volume,
wherein said update bit map is a map about said part of data designated by said identification of said first logical volume and said start and end addresses, and
if said part of data stored in said first logical volume is updated in response to said update request after receiving said split instruction,

said storage control device does not copy updated data stored in a part of area of said first logical volume, said part of data is stored in said part of an area, to said second logical volume and said storage control device updates said update bit map.